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(54) Title: PLANT LIMIT DEXTRINASE INHIBITOR

Hordeum vulgare
Oryza sativa
Hordeum spontaneum
Eleusine coracana
Secale cereale
Triticum durum
Zea mays
Triticum aestivum

---MASH-HR RFLVSGAVLL SVLAATAATL E--- SVKDEQCQGV
---MASH-KV VFSVLLAVV SVLAATAATMA EYHHQDQVY TPGLCQPGM
---MAFK--Y QLLLSAAVML AILAATVT-- SFGDMCAPGD
----- SVGTSCIPGM
----- SVGGQCVPLG
---MACKSSC SLLLLAAVLL SVLAA--A-- SASGSCVPGV
MASSSSSSHR RLILAAVLL SVLAAASA-- SAGTSCVPGW
---MASH-HR RFLVSGAVLL SVLAATAATL E--- SVEDEQCQGV

Hordeum vulgare
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DFPENPLATC HTYVIKRVCG ---RGPSRPM LV-----KERC
GYPMYPLPRC RALVKRQCVG ---RGTAATA EQ-----VRDC
ALPANPLRAC RYTVVQIC-- --HVGPRLAT WD-----MKRC
AIPENPLDSC RYTVVAKRACG ---VGPRLAT QF-----MKRC
AMPHNPLGAC RYTVVQIC-- --HVGPRLAT QF-----MKRC
AFRTNLLPHC RYTVVQIC-- --HVGPRLAT QF-----MKRC
AIPENPLPSC RYTVVQIC-- --HVGPRLAT QF-----MKRC
AIPENPLPSC RYTVVQIC-- --HVGPRLAT QF-----MKRC
AIPENPLPSC RYTVVQIC-- --HVGPRLAT QF-----MKRC

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CRELAAPV-D HRCRCEALRL MDGVRTPE-- --GRVVEG RLGDERRDCPR
CQLAAVDD S WCRCEALSHM LGGIYREHLG ---APDVGHP MSEVFRGCR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR
CDELAIIP-A YCRCEALRII MDGVTWQ-- --GVFG-A YFKDMPCPR

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Secale cereale
Triticum durum
Zea mays
Triticum aestivum

BEQRAFAATL VTAACNLSG VQAPGVRLVL LADG-----
GDLERAAASL PAFQCNVDIPN GGG-GVCYNL ARSGV-----
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--
VQTSYAANL VNFQCNLWLT LHGSPSCPEL QPGYEVVL--

(57) Abstract: The invention provides a method of producing plants with altered number, size or composition of starch granules, including starch granules having a more uniform size or altered starch structure, the method comprising introducing into a plant a nucleotide sequence comprising a limit dextrinase inhibitor gene, or a fragment or variant, or sequence homologous to the gene sequence provided. Also provided are a nucleotide sequence and protein of the limit dextrinase inhibitor gene, and plant and plant parts produced by the method of the invention. Modified starch is also provided.

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